Tissue-engineered Valve from Cell-Remodeled Biopolymer

PI: Bob Tranquillo, Biomedical Eng, Univ. of Minnesota

Goal: Bioartificial replacement aortic valve



Co-Investigators

Victor Barocas, Ph.D., Department of Biomedical Engineering Emad Ebbini, Ph.D., Department of Electrical & Computer Engineering Mark Nicosia, Ph.D., Exponent Consulting Sarah Shumway, M.D., Department of Surgery Catherine Verfaillie, M.D., Department of Medicine & Stem Cell Institute

Specific Aims

¥3D FEM of cell-matrix interactions for mold optimization ¥constitutive model for the tissue grown from cell-remodeled ¥3D FEM of fluid-solid interaction in heart valve function ¥real-time US imaging system for heart valve function in vivo ¥assessment of adult multi-progenitor stem cells as the cell source

Funding: NHLBI

Valve-Equivalent Fabrication, Characterization, and Optimization